



SEQUENCE LISTING

<110> Rybak, Susanna M.

Newton, Dianne L.

Goldenberg, David M.

The Government of the United States of America

as represented by The Secretary of the

Department of Health and Human Services

<120> Immunotoxins Directed Against Malignant Cells

<130> 015280-325200US

<140> US 09/918,887

<141> 2001-07-30

<150> US 60/046,895

<151> 1997-05-02

<150> US 09/071,672

<151> 1998-05-01

<160> 4

<170> PatentIn Ver. 2.1

<210> 1

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:RNase A derived from
Rana pipiens, "onc protein"

<220>

<221> MOD_RES

<222> (1)

<223> Xaa = Glu or pyroglutamic acid

<400> 1

Xaa Asp Trp Leu Thr Phe Gln Lys Lys His Ile Thr Asn Thr Arg Asp
1 5 10 15

Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
20 25 30

Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
35 40 45

Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr
50 55 60

Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
65 70 75 80

Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
85 90 95

His Phe Val Gly Val Gly Ser Cys
100

<210> 2
<211> 249
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:nucleic acid encoding
"onc protein"

<400> 2
gatgttgatt gtgataatat catgtcaaca aacttggcc actgcaagga caagaacact 60
tttatctatt cacgtcctga gccagtgaag gccatctgta aaggaattat agcctccaaa 120
aatgtgttaa ctacctctga gtttatctc tctgattgca atgtaacaag caggccttgc 180
aagtataaaat taaagaaatc aactaataaa ttttgttaa cttgtgaaaa tcaggcacca 240
gttcattttt 249

<210> 3
<211> 83
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:"onc protein", positions
16-98 of SEQ ID NO:1

<400> 3
Asp Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys
1 5 10 15
Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile
20 25 30
Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe
35 40 45
Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu
50 55 60
Lys Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro
65 70 75 80
Val His Phe

<210> 4
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:carboxy terminal
sequence of RFB4-PE35KDEL and LL2-PE38KDEL chimeric
immunotoxins with Pseudomonas exotoxin A (PE) modified
by KDEL endoplasmic reticulum retention sequence

<400> 4
Lys Asp Glu Leu
1